



PATENT *Jfw*

Attorney Docket No. P106-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Terry Tarn

Art Unit: 2826

Serial No.: 10/698,656

Examiner: Victor Mandala

Filed: 10/30/03

For: **DEVICE PACKAGES WITH LOW STRESS ASSEMBLY PROCESS**

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(b)

Commissioner for Patents
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Sir:

The attention of the Patent and Trademark Office is hereby directed to the following documents:
serial number 10,167,361 to Patel, et al, filed June 11, 2002;

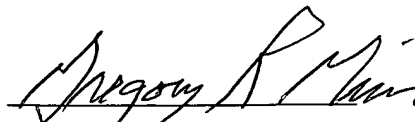
The attention of the Patent and Trademark Office is hereby also directed to the documents
listed on the attached PTO form 1449. Copies of the cited references are enclosed.

This Information Disclosure Statement is being submitted after issuance of a first official
action on the merits and expiration of the three month period following filing of the above-captioned
application, but prior to issuance of either a final official action or a Notice of Allowance.

The above information is presented so that the Patent and Trademark Office can determine
any materiality thereof to the claimed invention. It is respectfully requested that the information be
expressly considered during the prosecution of this application.

The Commissioner is hereby authorized to charge any additional fee (or credit any overpayment) associated with this statement to our Deposit Account No. 501516.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gregory R. Muir", written over a horizontal line.

Gregory R. Muir

Attorney for Applicant(s)

Registration No. 35,293

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PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/698,656		
		Filing Date	10/30/03		
		First Named Inventor	Terry Tam		
		Art Unit	2826		
		Examiner Name	Victor Mandala		
Sheet	1	of	4	Attorney Docket Number	P106-US

U.S. PATENT DOCUMENTS					
Examiner Initials [*]	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
	AA	US- 4,178,077	12-11-1979	TE VELDE	
	AB	US- 4,309,242	12-05-1982	TE VELDE	
	AC	US- 5,293,511	03-08-1994	PORADISH et al.	
	AD	US- 5,527,744	06-18-1996	MIGNARDI et al.	
	AE	US- 5,872,046	02-16-1999	KAERIYAMA et al.	
	AF	US- 5,963,289	10-05-1999	STEFANOV et al.	
	AG	US- 6,165,885	12-26-2000	GAYNES et al.	
	AH	US- 6,207,548 B1	03-27-2001	AKRAM et al.	
	AI	US- 6,232,150 B1	05-15-2001	LIN et al.	
	AJ	US- 6,252,229 B1	06-26-2001	HAYS et al.	
	AK	US- 6,287,940 B1	09-11-2001	COLE et al.	
	AL	US- 6,303,986 B1	10-16-2001	SHOOK	
	AM	US- 6,323,550 B1	11-27-2001	MARTIN et al.	
	AN	US- 6,353,492 B2	03-05-2002	McCLELLAND et al.	
	AO	US- 2001/0007372 A1	07-12-2001	AKRAM et al.	
	AP	US- 2001/0022207 A1	09-20-2001	HAYS et al.	
	AQ	US- 2001/0034076 A1	10-25-2001	MARTIN	
		US- 5,835,256	11/10/98	HUIBERS	
		US- 6,046,840	4/4/00	HUIBERS	
		US- 2003/0008477	1/2003	Kang, et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials [*]	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
	BA	EP-1097901-A2	05-09-2001	HA et al.		
	BB	EP-1101730-A2	05-23-2001	WOOD et al.		
	BC	EP-1167281-A2	01-02-2002	KANG et al.		
	BD	WO-01/10718-A1	02-15-2001	GUANN-PYNG et al.		
	BE	WO-01/20671-A1	03-22-2001	XU et al.		
	BF	WO-02/12116-A2	02-14-2002	BROSNIHAN et al.		
	BG	WO-02/12116-A3	02-14-2002	BROSNIHAN et al.		
	BH	JP-2001129800-A	05-15-2001	MASAKI		
	BI	JP-2001144117-A	05-25-2001	OAKATTO et al.		
	BJ	JP-2001196484-A	07-19-2001	JU et al.		

Examiner Signature	Date Considered
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¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE CITATION MAR 21 2005 PATENT & TRADEMARK OFFICE 1637 TO-1449 Sheet 2 of 6		ATTY. DOCKET NO.		SERIAL NO.			
		P106-US		10/698,656			
		APPLICANT Terry Tam					
		FILING DATE 10/30/03		GROUP 2826			
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE	
	6,072,236	06/06/00	Akram, et al.				
	5,915,168	06/22/99	Salatino, et al.				
	6,353,492	3/5/02	McClelland, et al.				
	6,661,084	12/9/03	Peterson, et al.				
FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
Tom Glenn, et al., PACKAGING MICROSCOPIC MACHINES, MACHINE DESIGN, December 7, 2000.							
Balaji Sridharan, et al., POST-PACKAGING RELEASE A NEW CONCEPT FOR SURFACE MICROMACHINED DEVICES, Mechanical and Aerospace Engineering Department, 4 pgs.							
U. Gosele, et al., WAFER BONDING FOR MICROSYSTEMS TECHNOLOGIES, Sensors and Actuators 74 (1999) Pgs 161-168.							
Masao Segawa, et al., A CMOS IMAGE SENSOR MODULE APPLIED FOR A DIGITAL STILL CAMERA UTILIZING THE TAB ON GLASS (TOG) BONDING METHOD, IEEE TRANSACTIONS ON ADVANCED PACKAGING, VOL 22., NO. 2.							
In-Byeong Kang, et al., THE APPLICATION OF ANISOTROPIC CONDUCTIVE FILMS FOR REALISATION OF INTERCONNECTS IN MICROMECHANICAL STRUCTURES, SPIE Vol. 3321, Pgs 233-238.							
Sonja van der Groen, et al., CMOS COMPATIBLE WAFER SCALE ADHESIVE BONDING FOR CIRCUIT TRANSFER, International Conference on Solid- State Sensors and Actuators, Chicago, June 16-19, 1997, Pgs 629-632.							
G. Bink, et al., WAFER BONDING WITH AN ADHESIVE COATING, Part of the SPIE Conference on Micromachined Devices and Components IV, Santa Clara, California, September 1998, Pgs 50-61.							
Christine Kallmayer, et al., A NEW APPROACH TO VHIP SIZE PACKAGE USING MENISCUS SOLDERING AND FPC-BONDING, IEEE TRANSACTIONS ON COMPONENTS PACKAGING AND MANUFACTURING TECHNOLOGY-PART C., VOL. 21, NO. 1., JANUARY 1998, Pgs 51-56.							
Joachim Kloeser, et al., LOW COST BUMPING BY STENCIL PRINTING: PROCESS QUALIFICATION FOR 200 UM PITCH, 1998 International Symposium on Microelectronics, 11 Pgs.							
Michel M. Maharbiz, et al., BATCH MICROPACKAGING BY COMPRESSION-BONDED WAFER-WAFER TRANSFER, Microassembly Technologies, Inc, 8 Pgs.							

	Bharat Shivkumar, et al., MICRORIVETS FOR MEMS PACKAGING:CONCEPT, FABRIACTION, AND STRENGTH TESTING, JOURNAL OF MICROELECTROOMECHANICAL SYSTEMS, VOL. 6, NO.3, SEPTEMBER 1997, Pgs 217-224.	
	Hideki Takagi, et al., ROOM TEMPERATURE SILICON WAFER DIRECT BONDING IN VACUUM BY Ar BEAM IRRADIATION, Mechanical Engineering Laboratory, AIST. MITL., 6 Pgs.	
	Michael H. Beggans, et al., OPTICAL PRESSURE SENSOR HEAD FABRICATION USING ULTRA-THIN SILICON WAFER ANODIC BONDING, Part of the Symposium on Design, Test, and Microfabrication of MEMS and MOEMS, 10 Pgs.	
	T.P Glenn, et al., DESIGNING MEMS INTO SYSTEMS:PACKAGING ISSUES, http://www.ecnmag.com , 4 Pgs.	
EXAMINER		DATE CONSIDERED

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INFORMATION DISCLOSURE CITATION PTO-1449 <i>Sheet 4 of 6</i>			ATTY. DOCKET NO. P106-US		SERIAL NO. 10/698,656		
			APPLICANT Terry Tarn				
			FILING DATE 10/30/03		GROUP 2826		
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE	
	US2002/0117728	08/29/02	Brosnihhan, et al.				
	US2002/0180016	12/05/02	Shrauger, et al.				
	US2002/0063322	05/30/02	Robbins, et al.				
	US2001/0040675	11/15/01	True, et al.				
	US2001/0048064	12/06/01	Kitani				
	US2003/0047533	03/13/03	Reid, et al.				
	US2003/0161027	08/28/03	Kurosawa, et al.				
	6,541,832	04/01/03	Coyle				
	6,459,523	10/01/02	Ueda				
	5,998,242	12/1999	Kirkpatrick, et al.				
	6,810,899	11/2004	Franz, et al.				
	6,458,627	10/2002	Choi, Kwang Sung				
	5,702,764	12/1997	Kimuara, et al.				
	6,164,837	12/2000	Haake, et al.				
	5,175,409	12/1992	Kent, Harold B.				
	US 2004/0190112	9/30/04	Huibers				
	US 2004/0232535	11/25/04	Tarn				
	6,649,446	11/18/03	Goetz, et al.				
	US 2003/0211654	11/13/03	Kocian, et al.				
	US 2003/0000737	1/2/03	Liu, et al.				
	6,704,131	3/9/04	Liu				
	6,724,518	4/20/04	Meyer, et al.				
FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/698,656
		Filing Date	10/30/03
		First Named Inventor	Terry Tarn
		Group Art Unit	2520
		Examiner Name	Victor Mandala
Sheet	5 of 10	Attorney Docket Number	P106-US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ²	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	
	CA	ESPINOSA et al., "Identification of Residual Stress State in an RF-MEMS Device", MTS Systems Corporation white paper (May 2000).	
	CB	FRANKA et al., "Solder Bump Technology: Present and Future", Semiconductor Fabtech (May 1995).	
	CC	GLENN et al., "Packaging Microscopic Machines", Machine Design (Dec. 7, 2000).	
	CD	HARSH et al., "Flip-Chip Assembly for Si-Based MEMS", Proceedings of the 1999 IEEE International Conference on Microelectromechanical Systems (MEMS '99), Orlando, FL (Jan. 17-21, 1999), pp. 273-278.	
	CE	IRWIN et al., "Quick Prototyping of Flip Chip Assembly with MEMS", University of Colorado at Boulder white paper (July 17, 2000).	
	CF	IRWIN et al., "Quick Prototyping of Flip-Chip Assembly with MEMS", portions of slide presentation from the NSF Center for Advanced Manufacturing and Packaging of Microwave, Optical and Digital Electronics at the University of Colorado at Boulder (1998).	
	CG	LEE et al., "High-Q Tunable Capacitors and Multi-way Switches Using MEMS for Millimeter-Wave Applications", portions of slide presentation from the NSF Center for Advanced Manufacturing and Packaging of Microwave, Optical and Digital Electronics at the University of Colorado at Boulder (Sept. 1998).	
	CH	LEE et al., "Use of Foundry Services to Prototype MEMS for Millimeter-wave Applications", portions of slide presentation from the NSF Center for Advanced Manufacturing and Packaging of Microwave, Optical and Digital Electronics at the University of Colorado at Boulder (1998).	
	CI	LUXBACHER, T., "Spray Coating for MEMS, Interconnect & Advanced Packaging Applications", HDI Magazine (May 1999) (abstract only).	
	CJ	MOORE, D., "Automation Requirements for Die Bonding Process", Electronics Engineer (July 2000).	
	CK	TSAU, C., "Wafer-Level Packaging", MIT Microsystems Technology Laboratories Annual Report (May 2000), p. 49.	

Examiner Signature	Date Considered
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INFORMATION DISCLOSURE CITATION PTO-1449 <i>Sheet 6 of 6</i>		ATTY. DOCKET NO. P106-US		SERIAL NO. 10/698,656			
		APPLICANT Terry Tam					
		FILING DATE 10/30/03		GROUP 2826			
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE	
	6,232,150	5/2001	Lin, et al				
	2003/0089394	5/2003	Chang-Chien, et al.				
	6,528,344	3/2003	Kang, Seok-Jin				
	6,624,003	9/2003	Rice, Janet L.				
	2004/0035840	2/2004	Koopmans, Michel				
	6,791,735	9/2004	Stappaerts, Eddy A.				
	6,265,246	7/2001	Ruby, et al.				
	5,952,572	9/1999	Yamashita, et al.				
	6,297,072	10/2001	Tilmans, et al.				
	2004/0067604	4/2004	Ouellet, et al.				
	6,614,003	9/2003	Hembree, et al.				
	5,010,233	4/1991	Henschen, et al.				
	5,621,162	4/1997	Yun, et al.				
FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
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						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	Y.T. Cheng , et al., "Localized Silicon Fusion and Eutectic Bonding for MEMS Fabrication and Packaging", Journal of Microelectromechanical Systems, Vol.9, No. 1, March 2000, Pgs 3-8.						
	Liwei Lin, " MEMS Post-Packaging by Localized Heating and Bonding", 2000 IEEE, pgs 608-616						
	Farhad Sarvar, et al., "Application of Adhesives in MEMS and MOEMS Assembly: A Review, IEEE Polytronic 2002 Conference, Pgs 22-28.						
	Seong-A Kim, et al., "Closed Loop Solder-Lines on Heated Substrates", 2002 Electronic Components and Technology Conference, Pgs 1101-1105						
	Giles Huimpston and David M. Jacobson, "Principles of Soldering and Brazing", ASM International, Pgs 242-245- 7.3.2.3 Solution						
EXAMINER			DATE CONSIDERED				

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Attorney Docket No. P106-US -Serial No. 10/698,656

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